Notice of proposed changes to occupational exposure limits of 101 substances

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Ministère du Travail de l'Ontario

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August 4, 1992

NOTICE OF PROPOSED CHANGES TO OCCUPATIONAL EXPOSURE LIMITS OF 101 SUBSTANCES

On Saturday, August 1, 1992, I published in *The Ontario Gazette* a notice of proposed changes to the Occupational Exposure Limits of the 101 substances listed in the attached Table. Columns B to D of the Table list the current limits that are included in the Regulation respecting Control of Exposure to Biological or Chemical Agents, O. Reg. 654/86, and in certain designated substance regulations made under the *Occupational Health and Safety Act*, R.S.O. 1990, c. O. 1. The proposed new limits for these substances are listed in Columns E to G of the Table.

In the background provided in the Notice of Intent to Review Specific Occupational Exposure Limits, published in *The Ontario Gazette* on October 26, 1991, I stated that the Joint Steering Committee on Hazardous Substances in the Workplace was established by the Minister of Labour to develop and review regulations designed to control worker exposure to hazardous substances, under the *Occupational Health and Safety Act.* The work of the Joint Steering Committee involves achieving consensus on matters such as: determining priorities for substances to be regulated; developing a process for updating the Regulation respecting Control of Exposure to Biological or Chemical Agents (O. Reg. 654/86); and examining new approaches to the regulation of toxic substances.

The Occupational Exposure Limits Task Force of the Joint Steering Committee, consisting of labour and management representatives, is conducting the Interim Process for Reviewing and Revising Occupational Exposure Limits. The substances to be included in the Interim Process were selected following a review of exposure limits in five jurisdictions which follow a comprehensive process for the setting of exposure limits based on labour-management consultation. The five jurisdictions are the United Kingdom, Germany, Sweden, Norway and the Netherlands. The regulated limits from these five jurisdictions are being reviewed and the supporting scientific information and criteria documents for the lowest limits are being collected. A total of 235 substances will eventually be covered under the Interim Process, as I announced on October 26, 1991. Substances not covered under this notice will be dealt with in future notices.

Based on the recommendations of the Task Force conveyed to me by the Joint Steering Committee, I am proposing the new limits listed in Columns E, F and G of the attached Table, which are the lowest values found in one or more of the five jurisdictions. Information on the relevant documentation for the proposed limit and information on the other limits from the five jurisdictions for the substances listed in the Table is available from the Ministry, on request.

An essential part of this process involves soliciting public input to the Task Force on the proposed recommendations. This process encourages submission of comment on the socio-economic impact in Ontario and also scientific and technical data and studies not considered in the criteria documentation but having a direct bearing on the proposed limit. Therefore, written submissions are invited on any or all of the proposed limits. It is expected that valid proposed limits would be endorsed by the Joint Task Force unless submissions received in the public review process demonstrate significant adverse economic impact.

To demonstrate economic impact, a submission should describe:

1. The operations or processes which give rise to the exposures of concern;
2. Current exposure levels of the substance(s) under review in particular operations of concern (and information about whether the exposure levels are estimated or have been measured by air sampling);
3. The decrease in exposure which would be required to bring exposures into compliance with the proposed lower limit;
4. Changes in equipment or operations necessary to achieve and maintain compliance with the lower limit;
5. Costs of such changes;
6. Information on the impact of such costs relative to the financial status of the operation, company, and/or industry as a whole.

To demonstrate that a proposed limit is not reasonably practicable to achieve technically, a submission should describe:

1. The operations or processes which give rise to the exposures of concern;
2. Current exposure levels of the substance(s) under review in particular operations of concern (and information about whether the exposure levels are estimated or have been measured by air sampling);
3. The decrease in exposure which would be required to achieve and maintain compliance with the proposed lower limit;
4. A clear explanation of the conditions or circumstances which make it technically unfeasible to achieve compliance with the proposed lower limit.

In considering the technical and economic aspects of achieving compliance with these proposed occupational exposure limits, respondents should be aware that where typical exposure levels in the workplace may vary from day to day, it may be necessary to maintain typical exposures at levels lower than the stated occupational exposure limits in order to ensure compliance. The Task Force will also consider whether the jurisdiction has a skin notation for each substance and the evidence supporting the skin notation. Comments on the scientific evidence for a skin notation and also scientific data and studies not considered in the criteria documentation are invited.

Submissions should be sent to:

The Joint Steering Committee Secretariat
Regulation Development Unit
Health and Safety Policy Branch
Ministry of Labour
400 University Avenue, 9th Floor
Toronto, Ontario
M7A 1T7

The deadlines for submissions are:

* Group 1 - October 30, 1992
* Group 2 - January 29, 1993
* Group 3 - April 30, 1993

(For Groups see Attachment.)

Submissions will be made available for public examination. Requests for the confidential treatment of information will be considered; such requests should be made prior to submission of the confidential information. After consideration of public input, the Task Force would prepare for the Joint Steering Committee a report on the rationale and response to the public comments for recommended amendments to the occupational exposure limits, and this report would be published.

For further information, please contact Dr. Barry Lubek, Coordinator, Joint Steering Committee Secretariat, Ministry of Labour, Tel: (416) 326-7888; Fax: (416) 326-7889.

Bob Mackenzie
MPP Hamilton East
Minister of Labour

ATTACHMENT

CHEMICALS

Group 1

Acetic acid
Acetone
Aniline and homologues
1,2–Benzenedicarboxylic acid bis(2–ethylhexyl)ester
Borates, tetra, sodium salts (decahydrate)
2–Butanone
(Butoxymethyl)oxirane
Carbon dioxide
Carbon disulfide
Carbon monoxide
Carbon tetrachloride
Carbonyl fluoride
Chlorodifluoromethane
Cumene
Cyanogen chloride
Cyclohexane
Cyclohexene
Diatomaceous earth, uncalcined (total dust)
Dichlorodifluoromethane
1,2–Dichloroethane
1,1–Dichloroethene
Diethyl phthalate
1,4–Dihydroxybenzene
Dimethyl phthalate
1,4–Dioxane
Ethylbenzene
Ethylene oxide
Graphite, synthetic (total dust)
n–Heptane
Mineral wool fibre (total dust)
Precipitated silica (total dust)
Silica gel (total dust)
Titanium dioxide (total dust)
Zinc oxide dust (total dust)

CHEMICALS

Group 2

Asbestos fibres – Amosite
Asbestos fibres – Crocidolite
Asbestos fibres – Other
Cadmium and its compounds (as cadmium)
Chromates, dichromates and other hexavalent chromium compounds (as chromium)
2–Heptanone
n–Hexane
2–Hexanone
Iron pentacarbonyl (as iron)
2–Isopropoxyethanol
Lead
Magnesium oxide fume
Mesityl oxide
Nickel, metal and oxides and sulfides of (as nickel)
2–Nitropropane
Nonane
Octane
Oil, mineral – mist
Pentane
Rhodium, metal and water–insoluble compounds of (as rhodium)
Rhodium, water–soluble compounds, incl. chloride, nitrate, and sulfate (as rhodium)
Selenium & compounds excl. selenium hexafluoride, hydrogen selenide (as selenium)
Selenium hexafluoride (as selenium)
Styrene
Tantalum, metal and oxide (total dust)
Tellurium hexafluoride (as tellurium)
Tetraethyl lead
1,1,2,2–Tetrabromoethane
1,1,2,2–Tetrachloro–1,2–difluoroethane
1,1,1,2–Tetrachloro–2,2–difluoroethane
1,1,2–Trichloro–1,2,2–trifluoroethane
1,1,1–Trichloroethane
Trichloromethane

CHEMICALS

Group 3

Acetaldehyde
Arsine
Benzene
1,3–Butadiene
2–Chloro–1,3–butadiene – Skin
Dibutyl phthalate
1,2–Epoxypropane
Ethylamine
Ethylene glycol dinitrate
Fenthion
Formaldehyde
Formic acid
Glutaraldehyde
Hydrogen cyanide
Hydrogen fluoride
Iodoform
1–Methyl–2,4,6–trinitrobenzene
Methyl iodide
4,4'–Methylenebis–(2–chloroaniline)
alpha–Methylstyrene
Nitrogen dioxide
Nitroglycerine
Nitrotoluene ((sum of m–(99–08–1), o–(88–72–2), and p–(9–99–0)isomers))
Parathion
Persulfates, alkali metal, including ammonium, sodium and potassium persulfate
Phenol
Phenylhydrazine
Polychlorinated biphenyls (PCBs)
Silane
Toluidine (sum of o–, m– and p–isomers)
Trichloroacetic acid
Triethylamine
Vinyl acetate
Vinyl bromide

TABLE 1. TABLE OF CURRENT AND PROPOSED OCCUPATIONAL EXPOSURE LIMITS PUBLISHED FOR REVIEW AS OF AUGUST 1, 1992

	CURRENT ONTARIO LIMIT						PROPOSED ONTARIO LIMIT						
(A)	(B) TWAEV		(C) STEV		(D) CEV		(E) TWAEV		(F) STEV		(G) CEV		(H)
CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
Acetaldehyde 75-07-0	180	100					45	25					SWE
Acetic acid 64-19-7	25	10	37	15			13	5	25	10			SWE
Acetone 67-64-1	1780	750					600	125					SWE
Aniline and homologues - Skin 62-53-3	8	2					4	1	8	2			SWE
Arsine 7784-42-1	0.16	0.05					0.01	0.003					NOR
Asbestos fibres - Amosite 1332-21-4	0.5/cm³	0.5/cm³					0.1/cm³	0.1/cm³					NOR
Asbestos fibres - Crocidolite 1332-21-4	0.2/cm³	0.2/cm³					0.1/cm³	0.1/cm³					NOR
Asbestos fibres -Other 1332-21-4	1.0/cm³	1.0/cm³					0.1/cm³	0.1/cm³					NOR
Benzene 71-43-2	16	5					1.5	0.5	9	3			SWE
1,2-Benzenedicarboxylic acid bis(2-ethylhexyl)ester 117-81-7	5						3		5				SWE
Borates, tetra, sodim salts (decahydrate) 1303-96-4	5						2		5				SWE

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	(B) TWAEV		(C) STEV		(D) CEV		(E) TWAEV		(F) STEV		(G) CEV		
CHEMNAME	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	SOURCE
1,3-Butadiene 106-99-0	22	10					2.2	1					NOR
2-Butanone 78-93-3	590	200	885	300			150	50	300	100			SWE
(Butoxylmethyl) oxirane 2426-08-6	133	25					50	10	80	15			SWE
Cadmium and its compounds (as cadmium) 7440-43-9	0.05						0.02						NETH
Carbon dioxide 124-38-9			54000	30000					18000	10000			SWE
Carbon disulfide - Skin 75-15-0	31	10					15	5					SWE
Carbon monoxide 630-08-0	40	35					25	20					SWE
Carbon tetrachloride - Skin 56-23-5	31	5					12.6	2					SWE
Carbonyl fluoride 353-50-4	5.4						5						NETH
2-Chloro-1,3-butadiene-Skin 126-99-8	36	10					3.5	1	18	5			SWE
Chlorodifluoromethane 75-45-6	3535	1000					1750	500					NOR

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CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
Chromates, dichromates and other hexavalent chromium compounds (as chromium) 7440-47-3	0.05						0.02						SWE
Cumene - Skin 98-82-8	245	50					120	25					SWE
Cyanogen chloride 506-77-4					0.75	0.3					0.6	0.25	NETH
Cyclohexane 110-82-7	1030	300					525	150					NOR
Cyclohexene 110-83-8	1010	300					510	150					BRI
Diatomaceous earth, uncalcined (total dust) 68855-54-9	10						1.5*						BRI
Dibutyl phthalate 84-74-2	5						3		5				SWE
Dichlorodifluoromethane 75-71-8	4940	1000					2475	500	4000	750			SWE
1,2-Dichloroethane 107-06-2	40	10					4	1	20	5			SWE
1,1-Dichloroethene 75-35-4	20	5					4	1					NOR
Diethyl phthalate 84-66-2	5						3		5				SWE

* This British occupational exposure limit is for respirable dust

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CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
1,4-Dihydroxybenzene 123-31-9	2						0.5		1.5				SWE
Dimethyl phthalate 131-11-3	5						3		5				SWE
1,4-Dioxane - Skin 123-91-1	90						18						NOR
1,2-Epoxypropane 75-56-9	47	20					2	1					NOR
Ethylamine 75-04-7	18	10					9	5					NETH
Ethylbenzene 100-41-4	435	100					200	50					SWE
Ethylene Oxide 75-21-8			18	10						3			NOR
Ethylene glycol dinitrate - Skin 628-96-6	0.31	0.05					.18	0.03	0.6	0.1			SWE
Fenthion - Skin 55-38-9	0.2						0.1						NETH
Formaldehyde 50-00-0	1.5	1	3	2			0.6	0.5	1.8	1.5			NOR
Formic acid 64-18-6	9.4	5					5	3	9	5			SWE
Glutaraldehyde 111-30-8					0.8						0.25		NETH

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CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
Graphite, synthetic (total dust)	10						5						SWE
n-Heptane 142-82-5	1635	400					800	200					SWE
2-Heptanone 110-43-0	233	50					115	25					NOR
n-Hexane 110-54-3	176	50					90	25					NETH
2-Hexanone 591-78-6	20	5					4	1					NOR
Hydrogen cyanide 74-90-8					11	10					5	5	NOR
Hydrogen fluoride 7664-39-3					2.5	3					1.7	2	SWE
Iodoform 75-47-8	10	0.6					3	0.2					NETH
Iron pentacarbonyl (as iron) 13463-40-6	0.8	0.1					0.08	0.01					BRI
2-Isopropoxyethanol 109-59-1	105	25					44	10					NETH
Lead 7439-92-1	0.15						0.05						NOR
Magnesium oxide fume 1309-48-4	10						5		10				BRI

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	(B) TWAEV		(C) STEV		(D) CEV		(E) TWAEV		(F) STEV		(G) CEV		
CHEMNAME	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	SOURCE
Mesityl oxide 141-79-7	60	15					40	10					NOR
Methyl iodide - Skin 74-88-4	12	2					5	1					SWE
1-Methyl-2,4,6-trinitrobenzene - Skin 118-96-7	0.5						0.1		0.2	0.02			GER
4,4'-Methylenebis -(2-chloroaniline)-Skin 101-14-4	0.22						0.005						BRI
alpha-Methylstyrene 98-83-9	241						240						NETH
Mineral wool fibre (total dust)	10						5						BRI
Nickel, metal and oxides and sulfides of (as nickel) 7440-02-0	1						0.5						SWE
Nitrogen dioxide 10102-44-0	5.6	3					2	1					SWE
Nitroglycerine - Skin 55-63-0	0.5	0.05					0.27	0.03	0.9	0.1			SWE
2-Nitropropane 79-46-9	35	10					3.6	1					NETH
Nitrotoluene ((sum of m-(99-08-1), o-(88-72-2), and p-(99-99-0) isomers))-Skin 99-08-1	11	2					5.5	1					NOR

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	(B) TWAEV		(C) STEV		(D) CEV		(E) TWAEV		(F) STEV		(G) CEV		
CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
Nonane 111-84-2	1050	200					525	100					NOR
Octane 111-65-9	1400	300					725	150					NOR
Oil, mineral - Mist 8012-95-1	5		10				1		3				SWE
Parathion - Skin 56-38-2	0.1						0.05						NOR
Pentane 109-66-0	1770	600					750	250					NOR
Persulfates, alkali metal, including ammonium, sodium and potassium persulfate 7727-54-1	5						2						NOR
Phenol - Skin 108-95-2	19	5					4	1	8	2			SWE
Phenylhydrazine - Skin 100-63-0	22						0.6						NOR
Polychlorinated biphenyls (PCBs) 1336-36-3	0.05						0.01						SWE
Precipitated silica (total dust)	10						4						GER
Rhodium, metal and water-insoluble compounds of (as rhodium) 7440-16-6	1						0.1		0.3				BRI

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CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
Rhodium, water soluble compounds, incl. chloride, nitrate, and sulfate (as rhodium) 7440-16-6	0.01						0.001		0.003				BRI
Selenium & compounds excl. selenium hexafluroide, hydrogen selenide (as selenium) 7782-49-2	0.2						0.1		1.0				GER
Selenium hexafluoride (as selenium) 7783-79-1	0.16	0.05					0.1	0.025					GER
Silane 7803-62-5	6.6	5					0.7	0.5	1.5	1			BRI
Silica gel (total dust)	10						4						GER
Styrene 100-42-5	213	50					85	20					SWE
Tantalum, metal and oxide (total dust) 7440-25-7	10						5		10				BRI
Tellurium hexafluoride (as tellurium) 7783-80-4	0.2						0.1						BRI
1,1,2,2-Tetrabromoethane 79-27-6	14	1					7	0.5					BRI
1,1,2,2-Tetrachloro-1,2-difluoroethane	4165	500					834	100	834	100			BRI
1,1,1,2-Tetrachloro-2,2-difluoroethane 76-11-9	4165	500					834	100	834	100			BRI

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	(B) TWAEV		(C) STEV		(D) CEV		(E) TWAEV		(F) STEV		(G) CEV		
CHEMNAME	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	SOURCE
Tetraethyl lead 78-00-2	0.1						0.05		0.2				SWE
Titanium dioxide (total dust) 13463-67-7	10						5						NOR
Toluidine (sum of o-,m- and p-isomers) - Skin 95-53-4	9	2					4.5	1					SWE
1,1,2-Trichloro-1,2,2-trifluoroethane 76-13-1	7650	1000					3800	500					NETH
Trichloroacetic acid 76-03-9	6.7	1					1	0.75					SWE
1,1,1-Trichloroethane 71-55-6	1910	350					270	50					SWE
Trichloromethane 67-66-3	49	10					10	2					SWE
Triethylamine 121-44-8	41	10	62	15			8	2	40	10			SWE
Vinyl acetate 108-05-4	35						30						BRI
Vinyl bromide 593-60-2	22	5					4	1					NOR
Zinc oxide dust (total dust) 1314-13-2	10						5						SWE

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